

GUIDELINE D-4
(formerly 07-07)

Land Use On or Near Landfills and Dumps

Legislative Authority:

Environmental Protection Act, RSO 1990, Part V, Sections 27 and 46

O. Reg. 347, General -- Waste Management

Planning Act, RSO 1990, Sections 2(a)(b)(c)(f)(g)(h), 17(9), 22(3), 41(4) and 51(3)

Condominium Act, RSO 1990, Section 50(3)

Environmental Assessment Act, RSO 1990, Section 5(3)

Responsible Director:

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Last Revision Date:

April, 1994

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7.0 REFERENCE DOCUMENTS:

- a) Procedure D-4-1: "Assessing Methane Hazards from Landfill Sites"
- b) Ministry of Consumer and Commercial Relations Bulletin No. 91003: "Environmental Warnings/Restrictions"
- c) Ministry of Consumer and Commercial Relations Bulletin No. 80023: "Registration of Certificates & Provisional Certificates"
- d) Guideline D-7: "Requests for Land Use Approval under *EPA*, Section 46" (under development)
- e) Procedure D-1-1: "Land Use Compatibility: Procedure for Implementation"
- f) Procedure D-1-3: "Land Use Compatibility: Definitions"
- g) Guideline D-1: "Land Use Compatibility"

SYNOPSIS

This guideline specifies restrictions and controls on land use that the Ministry wishes to see implemented in the vicinity of landfills and dumps, in order to protect the health, safety, convenience and welfare of residents near such facilities. It complements existing ministry abatement programs for landfills and dumps, and is a direct application of Guideline D-1: "Land Use Compatibility."

Application of the guideline extends to all proposals for land use on, or near, operating and non-operating landfills, (as defined in O. Reg. 347) and dumps which contain municipal solid waste, industrial solid waste and/or sewage sludges. The guideline applies to all such facilities regardless of ownership. It does not apply to lands certified as organic soil conditioning sites under O. Reg. 347.

Ministry staff shall use the guideline when they are reviewing land use proposals, including official plans and amendments, and plans of subdivision/condominium:

- (a) at the request of the responsible Ministry or the delegated approving authority, under the *Planning Act* or the *Condominium Act*;
- (b) for land use requests subject to Section 46 of the *Environmental Protection Act*; and
- (c) for undertakings subject to the *Environmental Assessment Act*.

1.0 Introduction

This guideline protects the health, safety, convenience and welfare of residents from the potential adverse effects of landfills and dumps, by restricting or controlling land use in their vicinity. It complements the Ministry's existing abatement programs, and Ministry staff shall refer to it when they review land use proposals.

The principles of Guideline D-4 shall also be considered when looking for locations to establish a landfill in Ontario.

Procedure D-1-1: "Land Use Compatibility: Procedure for Implementation" discusses various implementation approaches and tools. Procedure D-1-3: "Land Use Compatibility: Definitions" provides definitions of terms, in addition to those included in Section 2.0 of this guideline.

2.0 Definitions

NOTE: Additional definitions are provided in Procedure D-1-3: "Land Use Compatibility: Definitions".

Fill Area:

The area of a waste disposal site set aside for landfilling or dumping (see **Conceptual Diagram No. 1.** below).

Land Use:

Any existing or proposed activity, structure, service, facility, or natural feature, either at, above, or below grade, which conforms to an approved municipal plan.

Land Used for Waste Disposal Purposes:

The land comprising the fill area, where landfilling or dumping has occurred, and the land which is being used or is to be used for the leachate buffer area and/or the gas buffer area; the land may be on- or off-site, (see **Conceptual Diagram No. 1** below).

Peripheral Area:

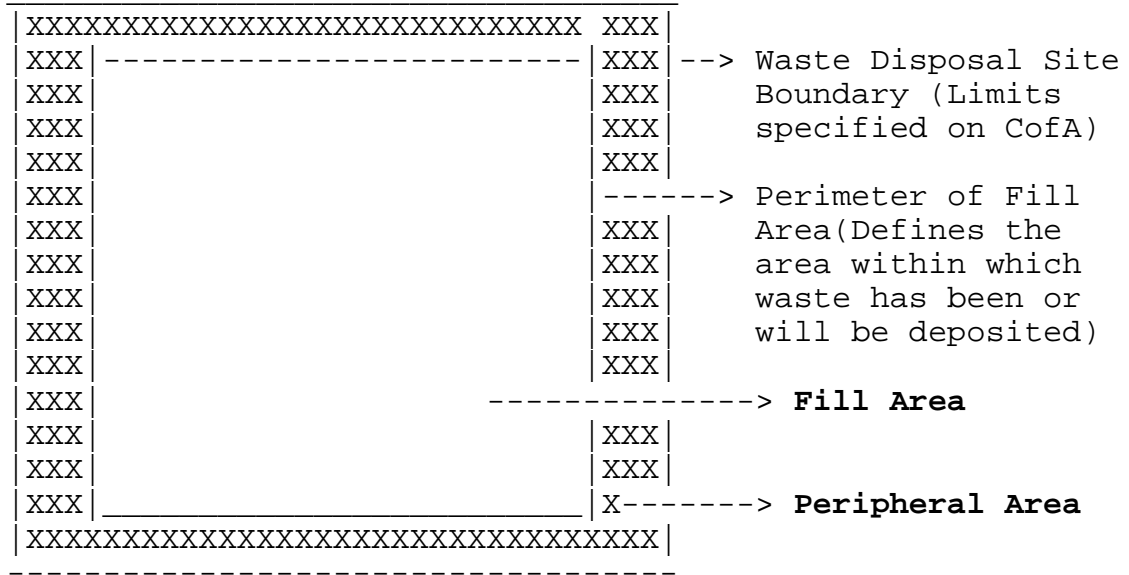
The area controlled by the site owner/operator between the boundary of the waste disposal site and the fill area; together, the peripheral area and the fill area make up the waste disposal site; the peripheral area will contain the buffer areas required to be on-site (see Conceptual Diagram No. 1 below).

Vectors and Vermin:

Disease-carrying organisms, insects, rodents, birds (especially gulls) and other harmful creatures (e.g., bears).

CONCEPTUAL DIAGRAM NO. 1

(Plan View)



LANDFILL OR DUMP

3.0 Application

3.1 General

This guideline applies to all proposals for land use on or near any landfill or dump which contains municipal solid waste, industrial solid waste and/or sewage sludges. It does not apply to lands certified as organic soil conditioning sites under O. Reg. 347.

3.2 Liquid Industrial and Hazardous Waste

For proposals in the vicinity of landfills and dumps that have accepted liquid industrial, toxic or hazardous waste, the Ministry shall expect proponents to undertake further investigations and provide a report to the approving authority. Where there is evidence of off-site migration of contaminants, the Ministry shall require abatement measures beyond those discussed in this guideline.

4.0 Environmental Considerations

Environmental considerations shall be considered by all parties involved in the production, review and approval of a study/evaluation report.

4.1 Operating Sites

Factors to be considered when land use is proposed near an operating site include: landfill-generated gases, ground and surface water contamination by leachate, odour, litter, contaminant discharges from associated vehicular traffic, visual impact, dust, noise, other air emissions, fires, surface runoff, and vectors and vermin. Particular attention shall be given to the production and migration of methane gas.

4.2 Non-Operating Sites

Factors to be considered when land use is proposed on or near a non-operating site include: ground and surface water contamination by leachate, surface runoff, ground settlement, visual impact, soil contamination and hazardous waste, and landfill-generated gases. Particular attention shall be given to the production and migration of methane gas.

4.3 Assessment

The adverse effects of the factors listed in Sections 4.1 and 4.2 of this guideline may create:

- (a) a hazard or health/safety risk;
- (b) a nuisance to man; and/or
- (c) degradation of the natural environment.

The overall extent, number, degree and frequency of contaminant discharges and visual problems can vary with each site. Consideration must be given to the nature of proposed land use(s).

Reference should be made to Reference (a) (Section 7.0), if particular site conditions warrant obtaining further information with respect to methane gas.

4.4 Buffering Techniques

One or a combination of buffers, as defined in Guideline D-1: "Land Use Compatibility", may be employed in a given situation.

4.5 Hydrogeologic/Engineering Studies

4.5.1 Responsibility

Where the hydrogeologic and geologic setting of the proponent's property and the inter-relationship with gas and/or leachate from the fill area are unknown, Ministry staff shall recommend to the approving authority that the proponent engage a qualified hydrogeologist and/or engineer to determine the subsurface conditions and, where necessary, propose remedial measures.

4.5.2 Exceptions

The Ministry shall not normally recommend a formal site investigation, as recommended in Section 4.5.1, when its staff is satisfied that the evaluation of existing data indicates the absence of a problem.

4.6 Controls and Monitoring for Adverse Effects

Where appropriate, Ministry staff shall recommend, as a condition of approval, that a proponent include controls to deal with adverse effects or risks to health or safety and that the approving authority monitor contaminant migration and carry out inspections of control facilities.

In the event that the approving authorities lack the expertise or resources to perform such inspections, they shall employ qualified consultants to do so.

4.7 Monitoring on Private Property

Where the approving authority requires monitoring and inspections on private property, Ministry staff shall recommend that a contract be executed between the proponent and the municipality, in the form of, or as part of an agreement that may be registered on title and run with the land. Documents which are able to be registered on title are identified in References (b) and (c) (see Section 7.0).

5.0 Land Use Considerations

5.1 Sensitive Land Use

The Ministry will normally recommend against proposals for sensitive land use (see Section 5.1.1. for details) adjacent to operating landfills, and on land used for waste disposal purposes where there are completed or partially completed fill areas.

Where land uses are proposed for approval on non operating landfills and dumps under Section 46 of the *Environmental Protection Act*, the Ministry normally shall not permit residential or other sensitive land use. Further details are provided in Reference (d) of Section 7.0.

5.1.1 Sensitive Land Uses for Landfills Currently in Operation

Any existing or committed land use which includes:

- (a) a permanent structure used in animal husbandry; or
- (b) agricultural land used for pasturing livestock; or
- (c) a permanent structure where:
 - (i) a person sleeps, or
 - (ii) a person is present on a full time basis;

but not including food or motor vehicle service facilities adjacent to a highway, utility operations, scrap yards, heavy industrial uses, gravel pits, quarries, mining or forestry activities; or

- (d) cemeteries

5.1.2 Compatible Land Uses for Landfills Currently in Operation

Compatible land uses may include:

- (a) utilities and above grade transportation routes except major highways;
- (b) fences;
- (c) wood harvesting and other forestry activities;

- (d) certain farming activities;
- (e) industrial uses, including incinerators permitted to operate under O.Reg. 347;
- (f) gravel pits and quarries, and other mining activities (provided the landfill water table is not affected); or
- (g) such land uses which would not be threatened by any hazard to public health or safety and would not be impaired by nuisance effects.

5.2 Land Use Within 30 metres of a Fill Area

5.2.1 Operating Sites

No land use may take place within 30 metres of the perimeter of a fill area. This is a minimum distance.

Each operating landfill shall have an on-site operational/maintenance buffer area identified on the Certificate of Approval. This buffer shall be no less than 30 metres; it is normally 60-100 metres.

5.2.2 Non-Operating Sites

Where technical controls for leachate, or leachate and gas are required surrounding a fill area, no land use may take place within 30 metres of its perimeter. This distance may be reduced to 20 metres in cases where only gas controls are necessary.

5.3 Land Use Within 500 metres of a Fill Area

The Ministry considers the most significant contaminant discharges and visual problems to be normally within 500 metres of the perimeter of a fill area. Accordingly, the Ministry recommends this distance be used as a study area for land use proposals. Ministry staff shall ensure that the proponent has evaluated the presence and impact of any adverse effects or risks to health and safety and that necessary remedial measures are taken when land use proposals are within this distance. This assessment shall be based on the nature and knowledge of the disposal site, and the nature of land use(s) proposed.

Actual influence areas for the considerations listed in Section 4.1 and 4.2 of this guideline will vary with the individual landfill or dump. Where the actual influence area of a site has been determined to be less than the 500 metre study area set out in this section, the study area for land use proposals can be reduced to coincide with the actual influence area.

5.4 Land Use Beyond 500 metres of a Fill Area

Where significant impacts are encountered at or beyond 500

metres, the study area within which an assessment for any change in land use is recommended, shall be extended beyond the 500 metre area set out in Section 5.3. Historical evidence in Ontario has shown that the maximum distance within which adverse effects could be experienced while a landfill is operating is up to 3 kilometres.

In exceptional hydrogeologic situations, such as areas of fractured rock or sand, where it is anticipated that leachate or gas from a non-operating landfill or dump could migrate beyond 500 metres and pose a problem, Ministry staff shall recommend that proponents carry out hydrogeologic and/or engineering studies for land use proposals beyond 500 metres of a fill area (see Section 4.5 for more details).

5.5 Significant Impacts

The Ministry shall recommend against land use proposals where proponents have not incorporated feasible remedial measures to prevent or minimize adverse effects (as discussed in Section 4.3).

5.6 Sequential Development

In considering long-range planning, the Ministry may recommend that proponents delay or phase certain types of land use to coincide with closure of sections of a landfill, or the operation itself, as nuisance effects are reduced or eliminated. This approach shall only be permitted in cases where no risks to health or safety are present.

6.0 Responsibilities

6.1 Operators and/or Owners of Landfills or Dumps

The Ministry shall require operators and/or owners of operating landfills and non operating landfills and dumps to comply with the *Environmental Protection Act* and O. Reg. 347 (Waste Management) requirements for the control of adverse effects caused by these facilities.

6.2 Proponents/Consultants

Ministry staff shall recommend to the approving authority that the proponent provide a report on environmental considerations (see Section 4.0) and, where necessary, propose and implement appropriate control measures. These measures shall include design details and specifications for any control device or facility.

6.3 Municipalities

The local municipal authority is responsible for ensuring that proponents implement and monitor proper control measures associated with new, sensitive developments. It also shall ensure that periodic inspections of operating landfills and non-operating landfills and dumps for contaminant migration and potential hazards are carried out.

6.4 Ministry

With respect to its mandate for landfills and dumps, the Ministry shall exercise the following responsibilities:

6.4.1 Near Land Used or to be Used for Waste Disposal Purposes

Ministry staff will expect proponents and municipalities to fulfil their responsibility to protect public health and safety in areas of land use near a landfill or dump, and to prevent significant impacts from difficult-to-control nuisance effects which may extend beyond the lands under the Certificate of Approval for an operating landfill.

6.4.2 On Land Used for Waste Disposal Purposes

Where a proponent submits a land use proposal for approval under Section 46 of the *Environmental Protection Act*, the proponent must assure Ministry staff and the municipality that the proposal contains adequate measures for the protection of public health and safety, in order to facilitate the Minister making a decision on approval.

Where an approval under *EPA* Section 46 is not required from the Minister, Section 6.4.1 of this guideline applies.

7.0 Reference Documents:

- (a) Procedure D-4-1: "Assessing Methane Hazards from Landfill Sites"
- (b) Ministry of Consumer and Commercial Relations Bulletin No. 91003: "Environmental Warnings/Restrictions"
- (c) Ministry of Consumer and Commercial Relations Bulletin No. 80023: "Registration of Certificates & Provisional Certificates"
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